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SOVIET SCIENTIFIC BOOKS, 1951 - 1952

[Comment: The following list of books, published in 1951 and 1952, is taken from Novye Izdaniya Akademii Nauk SSSR (New Publications of the Academy of Sciences USSR), No 5, 1951, and No. 3 and 4, 1952, published by the Publishing House, Academy of Sciences USSR. The Soviet abstract of the book follows each title in English.]

Physicomathematical Sciences

Amorphous Substances; The Physicochemical Properties of Simple and High-Molecular Substances (Results and Problems of Contemporary Science Series), 1952, 431 pp with illustrations, 16 85 R

This monograph discusses contemporary ideas on simple amorphous substances and polymers, and explains the results of experimental research. The book contains a resume of works recently completed in this field and pays particular attention to the work of Soviet scientists.

Series of Dirichlets Polynomials and Their Generalization, by A. F. Leont'yev, Trudy, Mathematics Institute imeni V. A. Steklov, Vol XXXIV, 1951, 212 pp, 8.90 R

There are four chapters in this volume: (1) sequences of linear aggregates; (2) series of Dirichlet's polynomials with complex indices; (3) series of Dirichlet's polynomials with indices close to real; and (4) applications. At the beginning of the book information on the theory of integral functions is given.

Index of Summarized and Original Articles Printed in *Zhurnal Tekhnicheskoy Fiziki* (Journal of Technical Physics) Vol I-XX (1931 - 1950), 1952, 190 pp, 2,500 copies printed, 9.50 R

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The index consists of two parts. The first is an alphabetical index of authors. The second is a subject index, with all articles listed alphabetically by subject and divisions of technical physics with this arrangement, the reader can easily find any article printed in the journal.

Chemical Sciences

Alloys of Iron with Chromium and Manganese; Structural Diagrams, by A. T. Grigor'yev, Prof, Dr Chem Sci (Institute of General and Inorganic Chemistry imeni N. S. Kurnakova), 1952, 136 pp with illustrations and eight inserts, 6.40 R

Alloys of iron with chromium and manganese are widely used in industry. The book includes a survey of the basic scientific research works on these alloys (the physicochemical processes of obtaining them and their composition, properties, and structure) and also original research work of the author. Many original illustrations, including microphotographs, are given.

The Status of the Theory of Chemical Structure in Organic Chemistry, All-Union Conference, 11 - 14 July 1951, Stenographic account (Department of Chemical Sciences, Academy of Sciences USSR), 1952, 440 pp, 20 R

This conference, in which scientific workers in the fields of chemistry, physics, and philosophy took part, subjected the idealistic theory of resonance to a thorough criticism and judged that the most important theory of structure in the field of natural science is the materialistic theory founded by the great Russian chemist A. M. Butlerov, supplemented by the later achievements of contemporary science. The basic report of the conference and the many speeches made by the participants are included in the book.

The Chemistry of Isotopes, by A. I. Brodskiy (Department of Chemical Sciences), 1952, 352 pp with illustrations and three inserts, 7,000 copies printed, 22.50 R

This is monograph which thoroughly discusses the methods of research and the physicochemical properties and the uses of isotopes of chemical elements. The use of isotopes as tracer atoms in different fields of science (chemistry, biology, medicine, etc.) and in industry has an extraordinary importance. A large part of the book is therefore devoted to the many investigations carried out with the aid of tracer atoms. Special chapters give the history of the discovery of isotopes (and the part played by Soviet scientists in this work), and discuss the occurrence of isotopes in nature, heavy water, and artificial radioactive isotopes.

The Method of Electrical Conductivity at High Temperatures and Its Application to the Investigation of Metal Alloys, by P. Ya. Saldau (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov), 1952, 207 pp with illustrations and 11 inserts, 2,500 copies printed, 10.70 R

The first part (general) of this book describes in detail the construction of the instrument used to measure the resistance of metal alloys at different temperatures up to 1,150°, and also gives an account of the method of using the instrument. It describes the use of the results of measurement of resistance (these results being given as curves) in dependence on the temperature for each investigated specimen of alloy. The construction of diagrams as isotherms of resistance and electroconductivity are shown, and the meaning of different types of these isotherms is discussed. In the second part (special) of the book, it is shown by examples how the method of electrical conductivity is applied to investigations of diagrams of state of metal systems.

Lithium and Its Alloys, by P. I. Shamray (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov), 1952, 283 pp with illustrations and ten inserts, 2,000 copies printed, 12 R

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The raw material sources of lithium, the chemistry of lithium compounds, and its metallurgy, properties, and analytical chemistry are examined. A detailed analysis of systems of binary and tertiary alloys with magnesium, aluminum, zinc, sodium, and silver and of systems of binary alloys of lithium with other metals is given.

Vinyl Ethers, by M. F. Shostakovskiy (Institute of Organic Chemistry), 1952, 280 pp, 2,000 copies printed, 13.50 R

Vinyl ethers have a wide application in different fields of industry and medicine. The author has aimed to show in this monograph how the vinyl reaction -- the synthesis of vinyl ethers on the basis of acetylene -- was discovered, to outline the use of this reaction in chemical industry, and also to show the role of Soviet science in the solution of questions connected with the use of acetylene in syntheses under pressure. He explains the mechanism of the formation of these unsaturated ethers and finally shows the part played by Soviet science in the development of the chemistry of vinyl ethers.

Geologicogeographical Sciences

The Minerals of the Ancient Crust of Erosion of the Urals, by I. I. Ginzburg and I. A. Rukavishnikova (Institute of Geological Sciences), 1951, 714 pp with illustrations, 40 R

This is the result of many years of research on the mineralogy of the eroded crust (the layer of the earth's surface subjected to disintegration by the action of the sun, water and winds). The silica minerals, brucite, aluminum hydroxide minerals, and the oxide and hydroxide minerals of iron, manganese, nickel, and cobalt are investigated and described, as well as magnetite, chromspinels, ilmenite and leucocene, andrylite, carbonates, sulphates, and others.

In the Subtropical Northwest Caucasus, by V. D. Kislyakov (Popular Science Series), 1951, 107 pp with illustrations, 2.95 R

A geographical and economic description of one of the regions of the northern Caucasus, the so-called Russian subtropics. The part of the "Caucasian Riviera" and the enormous transformation in the vegetable world, accomplished in the years of Soviet power, especially in the field of growth of subtropical cultures and their movement north, are shown.

Isothermic Cold Warehouses, by M. M. Krylov (Institute of Permafrost Studies imeni V. A. Obruchev), 1951, 88 pp with illustrations, 3.20 R

This book discusses the questions of the calculation, construction, and use of cold warehouses for the protection of perishable products without the use of mechanical refrigeration.

Biological Sciences

Vitamin Resources and Their Utilization, First Collection of Papers, Vitamin Resources of the Fisheries Industry (Institute of Biochemistry imeni A. N. Bakht), 1951, 295 pp, 13.50 R

This collection of papers arranges systematically data on raw material sources of vitamins A and D. The data in question were accumulated by a number of institutes. The products of marine and river fisheries of all principal USSR basins were investigated. New methods for the technological processing of these products, which permit efficient utilization of the vitamins, are described.

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Restorative Processes in the Skeleton Musculature, A. N. Studitskiy, A. R. Striganova (Institute of Animal Morphology imeni A. N. Severtsov), 1951, 171 pp with colored illustrations, five inserts, 15 R (bound)

This work discusses the problem of regeneration (restoration) of muscles after various animals (including mammals) have been subjected to injury in the form of wounds. Indicates what conditions must be created for the restoration to proceed effectively.

Larvae of Blood-Sucking Mosquitoes of the USSR and Adjacent Countries (Subfamily Culicinae), 2d improved and revised edition (Guidebooks to the Determination of USSR Fauna, published by the Zoological Institute, No 37), 1951, 288 pp plus illustrations, 24.25 R

In the general part, a description of the external structure and of the anatomy of larvae is given. This is accompanied by a detailed discussion of the functional significance and of the degree of modification of all essential traits that are important for identification. Special sections are devoted to the growth and determination of the phase /stage/ and age of larvae as well as to methods of their collection and study. In addition to tables facilitating identification, gives descriptions of larvae and data on their ecology and distribution. The bibliography lists the principal Russian and foreign reviews on the systematization and ecology of larvae and on methods of eradicating the larvae.

Adsorption and Oxidation Processes, by A. N. Frumkin, Reported at the Fourth Annual Bakh Lecture, 17 March 1948 (Institute of Biochemistry imeni A. N. Bakh), 1951, 21 pp with illustrations, 80 K

Describes the characteristics of adsorption processes in which oxygen molecules play a part. Reviews the connection between adsorption properties, redox potential, and the effect of oxidation on the properties of adsorbents (carbon, etc.).

Selected Works on the Drought and Frost Resistance of Plants, Vol I, The Water Systems and Drought Resistance of Plants, by Academician M. A. Maksimov, 1952, 575 pp with illustrations and one insert, 30 R

There are three parts to this volume: "The Water Utilization Systems of Xerophytes and Mesophytes," "The Physiological Bases of Drought Resistance of Plants," and "The Water Utilization Systems of Field Cultures in Dry and Irrigated Cultivation." At the beginning of the book is an article by S. D. L'vov, Corresponding Member, Academy of Sciences USSR, discussing the characteristics of the scientific work of Academician Maksimov, and Maksimov's report at the fourth annual Timiryazev lecture, "The Growth of Knowledge of the Water-Utilization Systems and Drought Resistance of Plants From Timiryazev to Our Day."

Selected Works on the Drought and Frost Resistance of Plants, Vol II, Frost Resistance of Plants, by Academician M. A. Maksimov, 1952, 294 pp with illustrations, 3,000 copies printed, 19.30 R

The second volume consists of five works on the physiological action of low temperatures on plants and their resistance to frost. The chief place in the book is occupied by the monograph "Destruction by Frost and Frost Resistance of Plants." This work consists of two parts: "The Freezing and Destruction by Frost of Plants" and "Frost Resistance of Plants and the Protective Action of Solutions." At the beginning of the book is an article, "Plants and Low Temperatures," which gives the problems of frost resistance in brief form.

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Trematoda of Animals and Human Beings; Basic Trematodology, Vol IV, by Academician K. I. Skryabin (Helminthology Laboratory), 1952, 759 pp with illustrations, 2,500 copies printed, 35.65 R

The structure, growth, dispersion, and medical and veterinary value of the separate groups of the parasitic worms of the subclass Aspidogastrea Superfamily [main family] heterophyoidea and family Microphallidae. Certain of these cause serious illnesses in human beings and also in domestic animals and fish. There are tables in the book for the determination of family, subfamily, genus, and species. A description of all known species of trematoda and drawings of them are also given. A bibliographical list is given at end of each chapter.

Also for sale are Vol II (1948), 28.80 R; Vol III (1949), 28 R; Vol IV (1950), 24 R; and Vol V (1951), 30.40 R.

Works of the Institute of Animal Morphology Imeni A. N. Severtsov; Issue VI, Notebook of the Laboratory of General and Comparative Physiology, 1952, 185 pp with illustrations, 2,000 copies printed, 10.80 R

This collection of papers is divided into two parts. Part 1 is the investigation of the enzyme-chemical nature of the nervous process. Part 2 contains material on the comparative physiology of the respiratory function of the blood of vertebrates.

Also for sale are Vol III, Issue 2 (1949), 6.80 R; Issues 2 (1950), 7.60 R, 3 (1950), 8 R, 4 (1951), 9.20 R, 5 (1951), 13.60 R.

Technical Sciences

Engineering Notebook; Vol XI (Department of Technical Sciences, Institute of Mechanics), 1952, 199 pp with illustrations, 11.20 R

This is a collection of articles on the application of theoretical mathematical and mechanical calculations to hydrotechnics, machine building, construction mechanics, and other fields of technics. In particular, it discusses the following problems: equilibrium of compressed shafts beyond the elastic limits; dispersion of shock waves in semi-infinite homogeneous rods of double rigidity; vibrations of initially stressed flexible systems; circular disks on a generalized elastic foundation; dynamic stresses on the teeth of gears.

Also for sale are Vol I, Issue 2 (1946), 9.60 R; Vol III, Issue 1 (1946), 10.80 R; Vol III, Issue 2 (1947), 9.20 R; Vol IV, Issue 1 (1947), 12 R; Vol IV, Issue 2 (1948), 12 R; Vol V, Issue 1 (1948), 11.20 R; Vol V, Issue 2 (1949), 10.80 R; Vol IX, (1951), 10 R; Vol X (1951), 10.80 R.

The Great Plan for the Transformation of Nature, by V. A. Kovda, (Committee for Coordinating the Construction of Hydroelectric Stations, Canals, and Irrigation Systems) (Popular Scientific Series), 1952, 109 pp, one insert, 2.55 R

The works for the transformation of the nature of the land are described. Creation of the state forest shelter belts, the irrigation and watering of the steppes and deserts, the construction of electric power stations on the Volga, Dnepr, Amu-Darya, and the opening up of new canals are discussed.

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